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Efficiency of Roxbury Investment

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PART I

MODEL SELECTION

I. Introduction

While the idea of attracting private business investment into ghetto areas is not new, the evidence suggests that private investment in these areas has not been widespread. Examples such as the AVCO Corporation and the E. G. & G. Corporation, while partially successful, are best justified in terms of social commitment rather than from a business standpoint. Preliminary calculations indicate that business investment in ghetto areas is not competitive with similar investments in other locations. A combination of financial sources is therefore necessary to justify ghetto investment. The Boston Model Cities Administration is looking toward a mix of private, federal, state and city funds to create an attractive investment environment. This study seeks to sketch out this environment. We seek to help the Model Cities Administration create an investment framework to be presented to industry that will show the benefits and costs of specific investments in Roxbury as compared to elsewhere.

This paper is presented to the Sloan School of Management to satisfy the requirements of 15.019 taught by Professor Paul MacAvoy. Professor MacAvoy was instrumental in initiating and monitoring the progress of this study. Initially it was conceived of as a true cost/benefit analysis, but through a series of evolutionary stages, has arrived at its present form. The authors wish to thank Dr. John Myers and the Boston Model Neighborhood staff for the time they devoted to us. The solutions or conclusions found in this paper, however, are our own and are not in any way meant to reflect those of the Boston Model Neighborhood Board.

While it would be possible to focus the entire paper on the theoretical frame of reference, the interest of Model Cities is in "results" in appropriate example cases. The study begins by isolating an operational framework and proceeds to collect and analyze data for this framework, for the reference or example case. The investors ought to be able to use this case as a measure against which to evaluate their own profit estimates.

Investments in a ghetto community are not believed to be competitive with other areas. Therefore in order to induce investment, a subsidy of some sort must be provided. The framework developed here is an attempt to measure the differential costs involved in locating in a ghetto area and to isolate the industries best suited to this environment--those with least differential costs.

The analysis must at all times take into account the community for which it is developed. Community control, and industry commitment to the community, is viewed by the Model Cities Administration as having real benefits, even though these are not quantified. This paper will help to illustrate the costs involved with varying degrees of industry commitment.

II. A Conceptual Framework

In most studies a conceptual framework provides a basis for data collection and analysis. Probably a more important use here

is to provide a common ground on which Model Cities personnel and people from local Roxbury agencies can communicate. But also in a study such as this, where there is no clear precedent as to how one should proceed, it is appropriate and important to obtain the views of all relevant groups. As a consequence one of the most important contributions of this model was to modify the way the study would proceed. With the incorporation of these modifications it then became the basis for data collection and analysis. This section will both sketch the framework and identify the major modifications that were suggested.

The major blocks of the model are sketched in Figure 1. Figures 2-5 provide a more detailed description of each category.

Initially, it was felt a survey of various industries should be conducted to ascertain those industries best suited to the Roxbury community. The criteria for a suitable industry came from both the analysis group and the community itself. Each group had a different set of criteria. The authors looked for growth industries, primarily labor intensive, while the community group focused on industries most likely to fit the physical environment. Once a group of industries is selected for consideration, programs deemed necessary by the community can be listed and the costs of each evaluated. The investment model attempts to assign costs to establishing industries in Roxbury. Rather than looking at the

problem as a return on investment, only incremental costs will be examined. It will be assumed that the businessman is about to invest anyway.[1]

A baseline for incremental cost must be established for comparative purposes. For investments in manufacturing, light industry, or distribution, a new plant located in Braintree will be used as the "base line" against which the additional costs in Roxbury will be assessed. Braintree has access to a comparable transportation system and the labor market is about the same as Roxbury. For possibilities in electronics, comparison will be made with a representative new plant in Burlington. Figure 6, the mix model, is used to examine all the cost differential for Roxbury against the base and to determine how the investment deficit can best be met (for example, the city might donate land or reduce the tax rate while the federal government could make money available at a lower interest rate). In addition, other data flow into the mix model from previous blocks. From the identification block, the private investor may realize additional demand for his product through purchases of his product by those he employs--as in a "closed economy" without trade with foreign nations.

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[1] The initial pass of the model will be on a company by company basis. It is expected that when actually used, however, programs will be formulated by several firms thereby gaining economies of scale.

In constructing this flow chart, various groups were consulted and a number of issues posed by their responses. Probably the most widespread and strongly voiced suggestion was that investment in housing should be an integral part of any private investment in new plant and equipment. The general feeling was that housing had been constantly torn down and not replaced. In addition, the community is skeptical of private industry utilizing the resources within Roxbury without some experienced social commitment to the community, and investment in housing is such a commitment. In terms of both community acceptance and community needs it was advised that housing should be an integral part of the investment package. Secondly, it was generally thought that the attractiveness of the potential Roxbury labor force would be the driving force in the choice of location there rather than elsewhere. With these recommendations or forecasts, and a general acceptance of the approach of the model, it was possible to outline the necessary data collection as the next step.

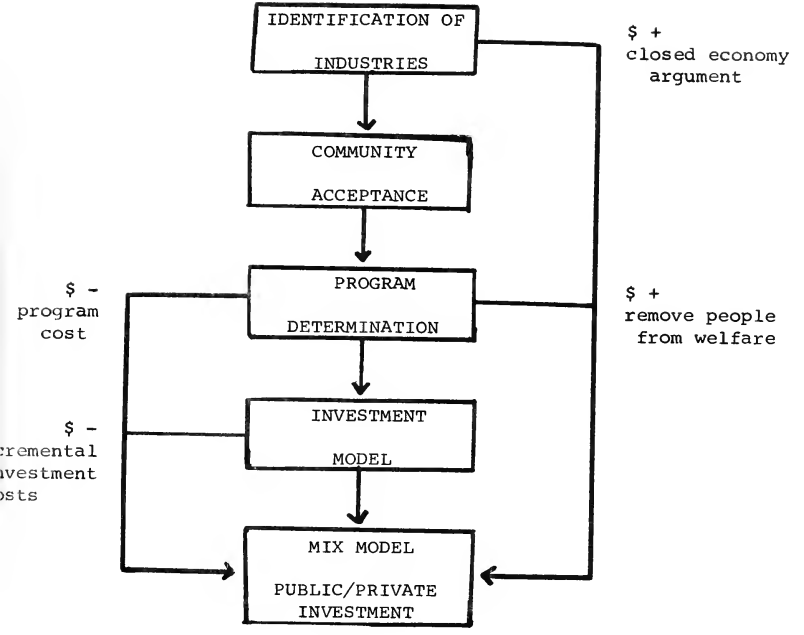

IDENTIFICATION OF INDUSTRIES
COMMUNITY ACCEPTANCE
PROGRAM DETERMINATION
INVESTMENT MODEL
MIX MODEL PUBLIC/PRIVATE INVESTMENT
$ + closed economy argument
$ + remove people from welfare
$ - program cost
$ - cremental vestment osts

FIGURE 1

IDENTIFICATION

- INCOME PROFILE
  function of total income
  high usage goods
- GROWTH INDUSTRIES
- APPROPRIATE LABOR MIX
- PAST GHETTO SUCCESS

- FIGURE 2 -

COMMUNITY ACCEPTANCE

- INDUSTRY ACCEPTABLE TO COMMUNITY
- BUILDING/PLANT NEEDS
- NECESSARY MANAGEMENT CONCEPTS ACCEPTABLE
- LABOR USE COMPATIBILITY

FIGURE 3

PROGRAM DETERMINATION

- TRAINING

  Production, Management, Administrative, Motivational/Attitude

- HEALTH
- GENERAL EDUCATION
- COMMUNITY ACCEPTANCE
- EMPLOYEE FAMILY BENEFITS

- FIGURE 4 -

INVESTMENT MODEL

- LAND
- TAXES
- INSURANCE
- TRAINING
- HOUSING
- OPERATING EFFICIENCY

FIGURE 5

MIX MODEL

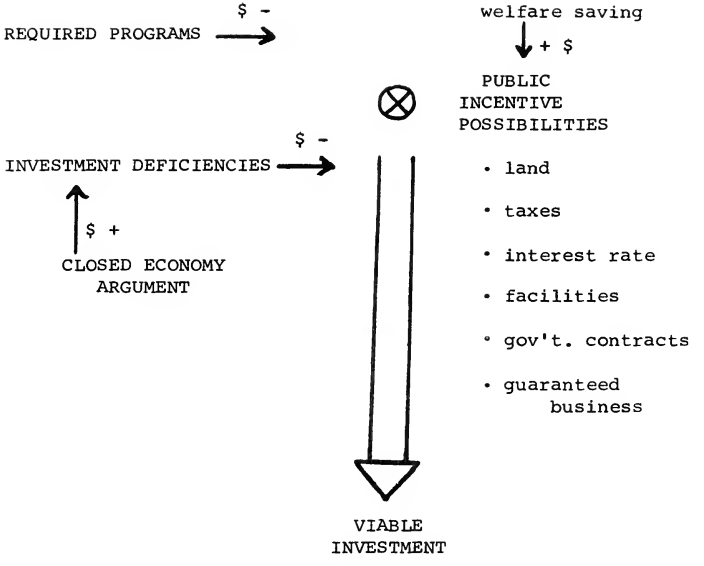


FIGURE 6

III. Data Workbook

The first considerations, given the importance of man power as an attractive force, are the size and skill distribution of the labor force. Figures 7, 8, and 9 set forth the appropriate data needs. The three charts develop the indigenous labor force that will be available to the private investor in Roxbury and also help indicate what types of industry would be most appropriate. Female has been distinguished from male to help estimate the potential need for day care centers. In addition, "presently employed" has been separated from "unemployed" to help identify the number of people available for early training and to separate those involved in a shift in jobs from those who would be newly employed. Figure 10 is a matrix that allows the labor force data to be summarized in a way that shows the needs for training. Based on the age, education, and past experience of members of the labor force, it will be possible to assess potential improvements in the skill mix of the labor force. Ultimately the matrix shows shifts in the labor skill mix after training, and helps identify training needs with training elements representing specific programs used in most categories of the matrix. (Figure 11 identifies a few of the training elements thought to be of interest; each of these

will be worked up to specify content, time, and cost)

On the basis of model or actual forecast training programs and other conditions given in Figure 12, it should be possible to identify the industries of particular interest to Roxbury. From the industry level, some attempts have to be made to predict the number and size of companies. Once the companies are identified it will be necessary to specify the housing that will be part of the investment. The data sheet for this step is given in Figure 13.

The remaining data collection will include figures on all the incremental costs--other than for housing--associated with the investment of a particular company. The needs for particular statistics are given in Figures 14 and 15. On the basis of the incremental cost estimates it will be possible to assess the subsidies needed to make this an attractive investment from the point of view of each company.

The following is a breakdown of the presently employed labor force in Roxbury.

SKILL	MALE	FEMALE
Clerical & Sales	____	____
Craftsmen & Foremen	____	____
Operatives & Unskilled	____	____
Service	____	____
Managers	____	____
Supervisors	____	____
Proprietors	____	____
Doctors	____	____
Lawyers	____	____
Teachers & Librarians	____	____
Engineers & Scientists	____	____

FIGURE 7

The following people are not presently employed, but have the following skills.

SKILL	MALE	FEMALE
Clerical & Sales	____	____
Craftsmen & Foremen	____	____
Operatives & Unskilled	____	____
Service	____	____
Managers	____	____
Supervisors	____	____
Proprietors	____	____
Doctors	____	____
Lawyers	____	____
Teachers & Librarians	____	____
Engineers & Scientists	____	____

FIGURE 8

If new industry were to come into Roxbury, it is realistic to expect the following labor force to immediately be available:

SKILL	MALE		FEMALE	
	Pres. Employed	Not Employed	Pres. Employed	Not Employed
Clerical & Sales	____	____	____	____
Craftsmen & Foremen	____	____	____	____
Operatives & Unskilled	____	____	____	____
Service	____	____	____	____
Managers	____	____	____	____
Supervisors	____	____	____	____
Proprietors	____	____	____	____
Doctors	____	____	____	____
Lawyers	____	____	____	____
Teachers & Librarians	____	____	____	____
Engineers & Scientists	____	____	____	____

FIGURE 9

If employment opportunities were to come to Roxbury with appropriate training the following skill mix should be available.

TRAINING MATRIX

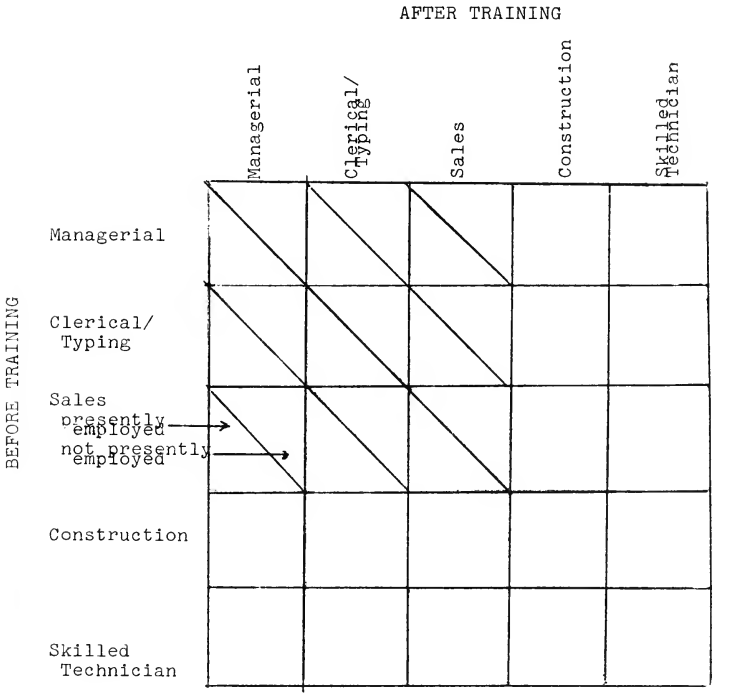


FIGURE 10

The previous analysis has developed a training matrix. On the basis of the matrix it should be possible to identify the major elements in a training program. The training elements may be part of many training programs and will be identified by a matrix entry.

TRAINING ELEMENTS

1. Health Care
2. Orientation on Role of Personnel Counselor
3. Education

   3 week reading skills
   3 week mechanical skills
   3 week number skills

4. Motivation/Attitude Seminar
5. Business Orientation

   what makes business work

6. Housing Care & Repair
7. Accounting
8. General Business Administration
9. Scientific Job Skill*

FIGURE 11

* directly related to company under consideration

ON THE BASIS OF THE FOLLOWING:

1. TRAINABLE LABOR IN ROXBURY
2. MARKET POTENTIAL OF THE INDUSTRY
3. ADVANTAGES IN ROXBURY
    a. transportation
    b. near central city
4. CAPITAL INVESTMENT/WORKER
5. UTILIZATION OF AVAILABLE SPACE

THESE INDUSTRIES SEEM FEASIBLE TO APPROACH

FIGURE 12

HOUSING DATA

FOR A PARTICULAR COMPANY THE FOLLOWING ARE APPROPRIATE HOUSING UNITS FOR EMPLOYED WORKERS.

	# UNITS	ALLOWABLE RENT/MONTH	COST/FT.^{2} *
EFFICIENCY	____	____	____
1 BEDROOM	____	____	____
2 BEDROOM	____	____	____
3 BEDROOM	____	____	____
4 BEDROOM	____	____	____
5 BEDROOM	____	____	____
6 BEDROOM	____	____	____
7 BEDROOM	____	____	____

FIGURE 13

* Cost/ft.^{2} used here as a measure of quality.

INCREMENTAL CAPITAL EXPENDITURES

I. LAND

land differential (Roxbury/ft.^{2} - Alternative/ft.^{2}) = ΔC

$$\text{land cost} = \begin{pmatrix} \text{clinic} \\ \text{housing} \\ \text{building} \end{pmatrix} - \text{ft.}^2 \quad \times \text{building/land ratio} \times \Delta C$$

II. TAX

tax differential (Roxbury/ft.^{2} - Alternative/ft.^{2}) = ΔT

$$\text{tax cost/yr.} = \begin{pmatrix} \text{clinic} \\ \text{housing} \\ \text{building} \end{pmatrix} - \text{ft.}^2 \times \begin{pmatrix} \text{corp.} \\ 1 - \text{income} \\ \text{tax} \end{pmatrix} \times \Delta T$$

III. INSURANCE COST

IV. HOUSING

housing = cost/ft.^{2} x ft.^{2} of Housing = H

$$\text{housing cost/yr.} = \frac{H}{I_0}^{*} - (\text{average rental/unit yr.} \times \#\ \text{units})$$

$$\text{housing loss saving yr.} = (\text{housing cost/yr.})\ (1 - \text{corp tax rate})$$

$$\text{housing deprec. saving/yr.} = (1 - \text{corp tax rate})\ \left(\frac{H}{I_0}\right)^{**}$$

* investment life
**straight line method

FIGURE 14

PROGRAM COSTS

I. TRAINING OF INSTRUCTORS

II. COMMUNITY PUBLIC RELATION PROGRAMS

1. Motivational
2. Health
3. Education

III. HEALTH PROGRAMS

IV. TRAINING PROGRAMS

PRODUCTION WORKERS

MANAGEMENT

MOTIVATIONAL

ADMINISTRATIVE

OPERATION COSTS

I. TURNOVER

II. ABSENTEEISM

III. COMMUNITY RELATIONS PERSONNEL

FIGURE 15

IV. Benefits of Model Cities

In examining the benefits of the Model Cities plan, it is clear that there is a variety in both the nature of the benefits and in the recipients. As a consequence, the dimension of the benefits wi be examined in terms of the three apparent groups of recipients:

1. Investing Companies
2. Roxbury Residents
3. Community

1. The Investing Companies

The incremental costs of investment will be lower on some dimensions in Roxbury as compared to elsewhere. The two categories of cost advantage are (1) subsidies and (2) real resource cost advantages. In the first, real estate assessments and rates can be reduced to levels that are competitive with outlying areas. Also, one might expect the federal government to provide direct grants to finance land and building cost differentials. In the second category, one would expect the costs of bringing electricity, water and roads to a new Roxbury plant to be considerably less than in outlying areas. In particular, the proximity of Roxbury

to the area's distribution centers and the presence of existing and planned expressways should considerably reduce transportation costs.

A second source of real benefits might come from the "closed economy" argument. As the economy in Roxbury expands, the income and consumption of its residents will expand simultaneously. Some of this expansion will increase the demand for goods produced by the investing firms. Although this factor may have little relevance in attracting firms producing products such as scientific instruments, it may provide significant benefits for service industries such as grocery stores, restaurants, gasoline stations, retail stores and health services.

The major source of real resource benefits for investing firms is the availability of a supply of labor. If a firm locates in a suburban area with a limited supply of industrial labor, then they will have to pay a premium wage in order to attract workers from other areas. However, the presence of an existing substantial supply of plant labor force in Roxbury would allow firms to pay standard wages.

There is one contradiction,since the model cities plan seeks to attract "growth" industries with demands for the highest levels of skilled labor, many of the skills needed will be in short supply. Therefore, the availability of a labor force willing to learn new skills, and government support for the training programs, are necessary to reduce costs that firms will have to pay for top rated

workers. If the skills are in limited supply in Burlington and Braintree as well, then the (1) training subsidies and (2) supply of trainable labor in Roxbury together, will provide a substantial net movement into the city. Also, because the investing firms will be the major provider of training, they will be able to train employees to meet the specific skill needs of their company.

II. The Roxbury Residents

The most apparent benefit to the Roxbury residents is the increased income which will result from the creation of jobs. This will result in an increase in health services, recreational facilities, educational facilities, housing, food and other goods or services consumed in Roxbury. Although difficult to measure, a significant part of the net benefits beyond those measured by the real income increase are psychological. The availability of job training and the supporting services will enable residents to obtain jobs which are meaningful to them and have opportunities for advancement to other higher levels of accomplishment. The program will also increase the residents perception of his ability to affect political decisions. As a result of stable employment, one would also expect the family structures to become more stable and the social and psychological needs of children met more fully. All of these benefits will combine to increase the worker's sense of dignity and purpose in life.

III. The Community

A great deal of difficulty is encountered when an attempt is made to examine benefits which accrue to the community. Not only are many benefits hard to measure, the community itself is difficult to define. In the short run, the metropolitan Boston area could be considered the community, however, the great majority of all funds come from the Federal Government. This would argue for a broader definition of "community". This paper has made no attempt to measure benefits and therefore we will be satisfied to provide a partial list of benefits to the community. The quantification of benefits and the definition of the "community" are left for further study.

Rothenberg[1] has defined a list of significant benefits and aims of a redevelopment program. They are:

1. The elimination of blight and slums.
2. The mitigation of poverty.
3. Provision of decent, safe and sanitary housing in a suitable environment for all.
4. Revival of downtown areas of the city.
5. Attraction of middle income families from suburbs back to the central city.

---

[1] Robert Dorfman, editor, Measuring Benefits of Government Investments, Jerome Rothenberg, "Urban Renewal Programs", Brookings Institute, 1965, p. 297.

6. Attraction of additional "clean" industry into the central city.
7. Enhancement of the budget balance of the central city government.

The preceding seven items are also relevant to an investment program in the inner city and may in fact be more relevant to this type of program. The investment program is an attempt to raise real income and eliminate poverty, while a redevelopment program has a minimal effect on poverty. Benefits such as the elimination of slums may in fact not be benefits to the community as a whole if redevelopment is the approach taken. In this instance it can be argued that slums satisfy a demand, (i.e., demand of poor families for housing) elimination of slums in one area will cause their spread to another. If real income is raised it can be expected that the demand for slum housing will fall in the entire community; the slums will not propagate.

Although difficult to measure, the major benefits to the community derived from the eradication of poverty may be listed.

1. lowering of crime rates
2. lowering of the health menace caused by overcrowded conditions
3. lowering of fire hazard
4. Elimination of social unrest

Rothenberg's items 4, 6, and 7 are easily seen as benefits, primarily because they increase the tax base of the community. Some of these benefits may be open to criticism, however, depending upon how broadly we define "community". A broad interpretation would consider some of these benefits as merely a redistribution of existing tax revenues. In any case it is the above list of four items which are crucial to a true cost/benefit analysis. It is not enough to state these items, an attempt at quantification must be made realizing the tradeoff between quantifying all benefits and arriving at an operational study.

V. Industry Analysis

On the basis of the preliminary and confidential data on Roxbury, it is possible to show some initial sample calculations. Consider first the labor supply potential in Roxbury. Both the data and information on the skills of the unemployed in Figure 17 indicate that most of the people are in service, unskilled, and operative categories. But, in addition, as the data indicates, there is a significant group of managers and supervisors in the area. These figures for supervisors and managers may reflect much of the indigenous entrepenueral talent that has not had an opportunity to fully use its talents. There is a category missing however: skilled factory or industrial personnel are in short supply. The data indicates training will be a necessary and important part for any industry coming to the area.

There is one other factor not reflected in these data that will be important in attracting industry to Roxbury. It is the present welfare system. An informal poll of individuals in the Model Cities offices indicated that under the present welfare system there is an incentive not to work at the semi-skilled level. For many people more income is available under welfare than from semi-skilled employment presently available. In addition, when

individuals work, care must be provided for children. Figure 18 summarizes two welfare cases and the additional cost of such case. In addition, the welfare system provides a measure of security to many people as they know the income is available to them. An informal poll again indicated that $2.50 - $2.75 per hour was a minimum attractive wage in light of present welfare policy.

With these factors in mind, in addition to projected industrial growth rates, (see Figure 19) it is possible to pick industries of interest. Probably the most obvious is the electronics assembly industry, since firms could afford to pay attractive wages and grow at more than the average economy-wide rate.

Wholesale and retail trades are also an interesting possibility because a close look at a consumption profile of low income families indicates that as wages are raised a disproportionate amount is spent on housing, clothes, furniture and other nondurable goods. Therefore, to a certain extent, a firm in these lines can count on increased employment to flow back to him in terms of increased purchases of non-durable goods.

For purposes of the investment analysis, the electronics assembly industry is the center of attention here. This is not to exclude other industries, but merely to focus on one obvious case.

Breakdown of presently employed labor force in Roxbury*

SKILL	MALE		FEMALE	
	no.	percentage	no.	percentage
Clerical & Sales	430	12%	240	30%
Craftsmen & Foremen	780	20%	40	5%
Operatives & Unskilled	1,390	36%	220	27%
Service	570	14%	160	20%
Managers	160	4%	10	0%
Supervisors	50	1%	10	0%
Proprietors	170	5%	10	0%
Doctors	10	0%		
Lawyers	20	½%		
Teachers & Librarians	50	1%		
Engineers & Scientists	10	0%	110	13%
Other Prof. & Tech.	190	5%		
	3,830	100%	800	100%

FIGURE 16

* source is a commercial data source, however, data used was preliminary data and contained certain known errors

SKILLS OF UNEMPLOYED[1]

OCCUPATION	PERCENT OF TOTAL UNEMPLOYED
LABORER	16.8
SERVICE WORKER	19.0
OPERATIVE	19.7
WHITE COLLAR	15.3
CRAFTSMAN	5.1
NEVER WORKER	13.1
NOT REPORTED	11.0

[1] "Sub-Employment in the Slums of Boston", a survey by the U.S. Department of Labor

FIGURE 17

WELFARE PAYMENT EXAMPLES

FAMILY OF SIX (man & wife living together)

BASIC	136.20
RENT	105.70
2 children 7-12	25.60
2 children 13-20	41.00
INSURANCE	6.00
	$314.50 per month

PLUS

1. All medical expenses
2. Globe Santa Package
3. Taxi fares

MOTHER WITH THREE CHILDREN

ages 9, 11, 12 $285.70/month

FIGURE 18

INDUSTRIES WITH LARGEST PROJECTED GROWTH 1964-1975 IN U.S.

Source: America's Industrial and Occupational Manpower Requirements, 1964-1975, U.S. Department of Labor, Bureau of Labor Statistics

INDUSTRY	EMPLOYMENT IN THOUSANDS		
	1964	PROJECTED 1975	CHANGE
Wholesale and Retail Trade	12,000	16,000	4,000
State and Local Government	9,500	14,400	4,900
Construction	3,000	4,000	1,000
Medical and Health	2,000	3,000	1,000
Finance, Insurance and Real Estate	2,964	3,700	736
Misc. Business Services	980	1,800	820
Electrical Machinery	1,500	2,000	500
Education	909	1,400	491
Trans., Public Utilities	4,000	4,400	400
Machinery (non-electrical)	1,600	2,000	400
Fabricated Metal	1,200	1,500	300
Motor Freight Transportation	920	1,200	280
Chemical	877	1,100	223
Hotels, Restaurants, etc.	640	820	180
Printing	951	1,100	149
Paper	625	775	150
Rubber	430	580	150
Prof. and Scientific Instruments	369	510	141

FIGURE 19

VI. Housing & Other Services

The Model Cities personnel have placed great emphasis on the fact that incoming industry must have a "stake" in the community. The primary manifestation is that industry should provide for some housing and health services as part of its "investment" in the Roxbury area. There are a number of significant difficulties associated with this regiment. Probably foremost is that is requires each industry to become involved in construction and in provision of services where it has not shown any competence. It is not clear that the typical electronics firm has the competence required to provide these ancillary services at low costs--and certainly not at "least" costs. Industries do not typically have experience in these community service areas and may be reluctant to invest at all if required to couple production of solid state devices with the activities of a landlord. Alternatively, this might be done through a community development corporation or through the market for housing, where the company provides "demand" by paying others for construction of new dwelling units. Individuals in Roxbury may realize that if they have money through wages they can purchase the quality of services in housing they want, so that only minor company payments might be required (to

substitute for bank or capital market reluctance to make direct Roxbury investments for reasons of prejudice).

Another factor in business provided ancillary housing and health services is the size of the business investment. Taking a rough estimate of $20,000 per dwelling unit for 50 units--housing for approximately half the number employed in a 40,000 square foot plant--the total housing investment will double the required investment in physical facilities. This may simply preclude good investment opportunities.

From the point of view of the community, there are a number of social and psychological drawbacks associated with housing constructed and operated by industry. The atmosphere is that of the old New England "company towns", with problems arising in dispossessing recalcitrant workers or "trouble workers" being in company owned apartments. Whether it be market or a community development possibility, there are other attractive and important alternatives that must be examined before concluding that business should provide these services.

VII. Investment Analysis

This section focuses on the incremental costs facing a firm moving into the Model Cities neighborhood. The figures used are, at best, rough, but give a picture of the order of magnitudes that will be faced by industry. Perhaps more important than the actual numbers is the direction indicated by the analysis. It is seen that by providing training, health, housing and related services, the costs to an entering firm are increased threefold over those in the usual investment. This is a significant increase, and may require policy makers to amend their demands on industry. It is felt that, while more refined data will certainly change the numerical result, this threefold increase in costs as a result of providing additional services will still be valid.

The analysis is divided into three areas for illustrative purposes. The first section isolates the differential costs in building the operating plant in the Model Neighborhood area, the second is a rough estimate of training costs, and the final section identifies housing costs.

It was felt that no attempt should be made to provide sophisticated investment analysis techniques (e.g., flows of funds, discounting, etc.) with the data as rough as it is at

this stage. The refinement of the data and the application of the techniques are not difficult and may easily be applied by the Model Cities board, if they approve the framework.

PHYSICAL PLANT - INCREMENTAL COSTS

(Roxbury vs. Braintree)

1. LAND

land differential = (1.75 - .50) = 1.25/ft.^{2}

considering a 40,000 ft.^{2} plant

Total land cost diff. = 40,000 x $\frac{2}{1}$ x 1.25 = $100,000

2. TAX

tax differential = (.75 - .30) = .45/ft.^{2}

considering 80,000 ft.^{2} site

tax cost differential = 80,000 x .45 = $36,000/yr.

3. INSURANCE

40,000 x 12 = 480,000 - building worth

.03

$14,400/yr. - Braintree insurance

insurance differential = 14,000 x .15 = $2,000/yr.

4. TAX SAVING

The increase in land tax is partially offset by the corporat
tax so,36,000 x (1 - .50) = $18,000/yr.

Total incremental costs (10 year investment life)	-	100,000	land
		20,000	insurance
		180,000	tax
		$300,000	

TRAINING COSTS

1. Job Training = $ 3,000/man

considering the factory employs 100 men

initial training = 50 men x $3,000 = $150,000
considering a 10% turnover

total training = 50 x 10% x 10 yr. x 3,000 = $150,000

TOTAL $300,000

2. Educational Training - if the community demands training beyond mere job training (a commitment by companies to provide educational services to the community) an additional $1,000/man should be added to the above figure.

1,000 x 100 = 100,000

Total training costs 300,000
100,000

$400,000

HOUSING

To provide housing for 50 families, the firm will incur the following costs.

$ 20,000/average unit x 50 units = $1,000,000 investment
x 20%

$200,000 initial outlay

Profitable average rent: $250/month

Expected average rent: $150/month

incremental housing cost

100/month x 12 month/yr. x 10 yrs. x 50 units

= $600,000

tax savings

600,000 x (1 - .50) = $300,000

net incremental housing cost $300,000

Considering that a plant is to be built in Roxbury, the entering industry may be asked to either:

1. Construct the physical plant only: incremental cost = $300,000
2. Construct the physical plant and provide training: incremental cost = $700,000
3. Construct the physical plant and provide housing: incremental cost = $600,000
4. Provide the total package (plant, housing, training): incremental cost = $1,000,000

The total incremental expenditure shown to this point is approximately $1,000,000 or about double the investment needed to provide the same plant facilities in Braintree. If the figures are viewed separately, it should immediately be seen that the incremental costs for the physical plant itself are only about one third higher than in Braintree.

But there are compensating advantages. Roxbury is closer to the Boston academic community, nearer to the heart of the city, better able to take advantage of transportation facilities (airports, trains, etc.), and better able to attract labor at the marginal rate. If a 100 man plant were able to attract 50 more laborers at $.50 below the wages paid in Braintree, the savings would be:

2080 hrs/yr. $.50/hr. x 50 men = $50,000/hr.

or $500,000 over the life of the project.

These have to be put against the cost disadvantages. Consider alternative 1. Without quantifying any of the above advantages except the wage rate it will be seen that the net increment is positive (i.e., benefits outweigh costs).

1. construct the physical plant only

wage savings =	$500,000
incremental cost =	300,000
net benefit =	$200,000

Options 2 and 3 show a small negative benefit (i.e., net cost to the community), the costs, however, are low enough for us to consider them viable alternatives.

2. construct the physical plant and provide training

wage saving =	$500,000
incremental cost =	700,000
net benefit =	($200,000)

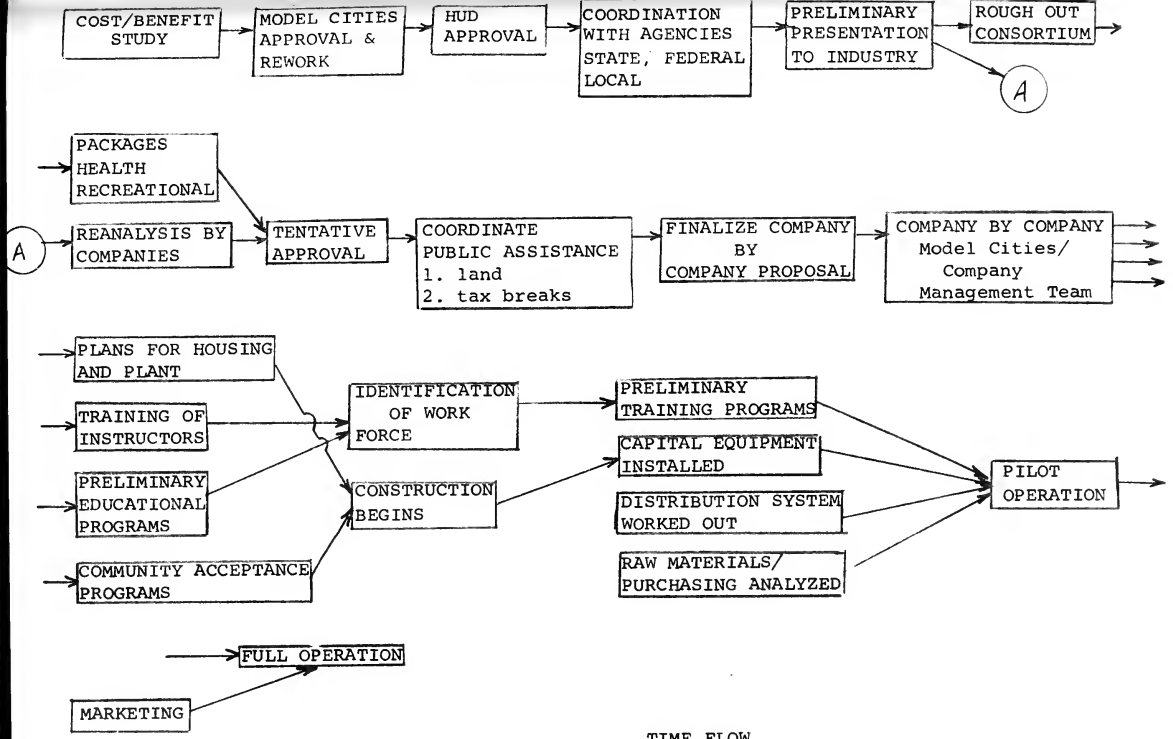
3. construct the physical plant and provide housing

wage saving =	$500,000
incremental cost =	600,000
net benefit =	($100,000)

It is left to the community to decide among the three viable alternatives. Options 2 or 3 will, however, demand a subsidy of $200,000 and $100,000 respectively.

VIII. Time Flow

The following chart illustrates the steps we expect the project will go through before final implementation. Although the cost/benefit study and investment model are the basis of the presentation, they are but the initial steps in the total plan.



TIME FLOW
ANALYSIS

IV. Conclusions

This report has developed a framework in which potential business investment in Roxbury can be analyzed. The cost estimates in the report indicate that it is more expensive for a firm to build and operate in Roxbury than it would be in outlying areas. While the details for each firm would have to be worked out separately, it does give a rough idea of what these factors are and their magnitude.

Depending on the particular firm, the plant location, building size, and training needs, it should be possible to coordinate a business-city-state-federal package to make this investment attractive. If Model Cities find this approach acceptable it could now begin to work out the details by approaching a particular company and then the appropriate public agencies. It would seem appropriate first for the Model Cities administration to clarify certain issues such as:

1. appropriate approach to ancillary services
2. mechanisms for training programs
3. what constitutes community control in business. All the details of what constitutes community control for the Roxbury community and the Model Cities agency should be worked out before individual firms are approached.

Date Due

~~NOV 17 '75~~	APR 2 9 '78	MAR [illegible] 1992
DEC 05 '76		APR. [illegible] 204
~~JUL 28 '76~~	[illegible] 30	NOV 1 3 1986
[illegible]	JAN 16 '80	
[illegible] 15 '77	JUN 19 '80	
OCT 14 '77		
MAR 2 1 '78	APR 07 '81	
APR 3 '78	JUL 02 '81	
	OCT 11 [illegible]	
	[illegible]	
DEC 22 '78	DEC 1 8 1986	
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FEB 15 '79		

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